REMARKS

This is in response to the Office Action of 12 February 2003.

Support for Amendments to the Specification

The Applicant has amended typographical errors in paragraphs 8, 17, 20, 31, 43, in Example 1 on page 17, and in paragraphs 46 and 56 of the Specification. The Applicant has also amended paragraphs 21 and 40 by adding the sentence "Preferably, the temperature is between 240-300°C and the pressure is between 3.5~8.4 MPa." The Applicant submits that support for the amendments to these paragraphs is found in Examples 1 and 2 on pages 17 and 18, where it is disclosed that the compounds PAM-120 and PBM-100, which are completely free of glucosyl groups, and PAN-20, which only has one glucosyl group at position 3, are produced by exposing ginseng extract to a temperature of 240°C and 3.5 MPa (shown in Example 1) or 270°C at 4.5 MPa (shown in Example 2). The Applicant submits that no new matter has been added by these amendments.

Support for Amendments to the Figures

The Applicant filed formal drawing sheets for this application on 31 December 2001 to replace the drawings that were originally filed with this application. Currently pending formal Figure 5 is an incorrect depiction of the originally filed Figure 5. The Applicant files herewith a correct depiction of the originally filed Figure 5 and submits that no new matter has been added by this amendment.

Support for Amendments to the Claims

The Applicant has amended claim 1 by deleting portions of the claim directed to the compounds PBM-110 and PAN-30. The Applicant has also cancelled claims 4, 6, 11, 13, and 15 which were directed to these compounds.

The Applicant has amended and re-worded claim 7 so that it is directed to a method of treating cancer cells rather than a use of a sapogenin to treat cancer cells. The Applicant submits that support for amended claim 7 is found in paragraph 16, on page 6 of the Specification.

The Applicant has amended and re-worded claim 8 so that it is directed to a method of treating multi-drug resistant cancer cells rather than a use of a sapogenin to treat multi-drug

resistant cancer cells. The Applicant submits that support for amended claim 8 is found in paragraph 16 on page 6 and paragraph 15 on page 5, starting at line 17 where it is stated that the sapogenins of the invention are particularly useful in "treating drug resistant cancer cells (MDR) in a human being suffering from cancer."

Claim 14 has been amended to incorporate the compound PAN-20, which had originally been claimed in claim 15, and to delete reference to the compound PBM-110. As noted above, claim 15 has now been cancelled. Accordingly, claims 24 and 26 which depend from claim 15 have also been cancelled.

The Examiner has rejected claims 16 to 25 under 35 USC § 112 as being indefinite. The Examiner contends that the term "cancer treatment method" used in these claims has no antecedent in claim 14, from which these claims depend. The Applicant has amended and re-worded these claims so that they are directed to a "method of treating cancer" which has antecedence in claim 14. The Examiner has also rejected claims 17 and 18 because the term "active ingredient" in these claims has no antecedent in claim 14, from which these claims depend. The Applicant has replaced the term "active ingredient" with the term "composition" which has antecedence in claim 14. The Applicant has also corrected a typographical error of the numeral "50" in claim 18.

Claim 33 has been amended to correct a typographical error. The Applicant submits that support for this amendment can be found on page 14, paragraph 40, where the reaction steps are described.

Claim 34 has been amended to delete the step of mixing the ginsenoside extract with water. The remaining steps have been re-numbered accordingly.

Claims 35, 36, 37, and 38 have been added to claim a method of treating human lung cancer cells using PAM-120, PBM-100, and PAN-30. The Applicant submits that support for these claims is found in Example 3 on pages 18 to 20, including Table 2.

Claims 39, 40, 41, 42, 43, and 44 have been added to claim a method of treating sarcoma tumor cells using PAM-120, PBM-100, PBM-110, PAN-20 and PAN-30. The Applicant submits that support for these claims is found in Example 4 on pages 20 and 21, including Table 3.

Claim 45 has been added to claim a method of prolonging the life of a patient suffering from sarcoma. The Applicant submits that support for this claim is found in Example 5 on pages 22 to 23, including Table 4.

Claim 46 has been added to claim a method for treating breast cancer cells using PAM-120, PBM-100, PBM-110, PAN-20, and PAN-30. Claims 47 to 57 have also been added to claim the method of treating breast cancer cells using PAM-120 in combination with chemotherapeutic agents, such as cisplatin and taxol. The Applicant submits that support for these claims is found on pages 23 and 24, in paragraphs 56, 57, and 58, and in Figure 2, Figure 3, and Figure 4.

Claim 58 has been added to claim a method of treating malignant glioma cells using PAM-120. The Applicant submits that support for this claim is found on pages 24 and 25, in paragraphs 59 and 60, and in Figures 5 and 6 .

Claim 59 has been added to claim the sapogenins as claimed in claim 1 wherein the sapogenin is incorporated into a food, a health food, a nutritional product, a natural product, or an alternative medicine product. The Applicant submits that support for this claim is found on page 6 in paragraph 19.

Claims 60 to 65 have been added to claim a method of treating melanoma cells using PAM-120, PBM-100, PBM-110, PAN-20, and PAN-30. The Applicant submits that support for these claims is found on page 23, paragraph 55 and in Figure 1.

Claim 66 depends from claim 27 and it has been added to claim a temperature range between 240°C and 300°C and a pressure range between 3.5 and 8.4 MPa for the process claimed in claim 27. The Applicant submits that support for these claims is found in the methods disclosed in Example 1 and Example 2 on pages 17 and 18.

Claims 67, 68, and 69 have been added to claim processes of producing PAM-120, PBM-100, and PAN-20 by reacting ginseng extract at a temperature range between 240°C and 300°C and at a pressure between 3.5 and 8.4 MPa. The Applicant submits that support for these claims is found in the methods disclosed in claims 27, 33, and 34, in Figure 7, and in the specification on page 17, in paragraph 40, and in Example 1 and Example 2 on pages 17 and 18.

35 USC § 103 Rejection of Compound Claims 1 to 26

The Examiner has rejected compound claims 1 to 26 under 35 USC § 103(a) as being obvious in light of Japanese Abstract No. JP08291194 issued to Hasegawa Hideo et al. ("Hideo") and PCT Publication No. WO 97/31933 filed by Park et al. ("Park"). On page 6 of the Office Action, the Examiner asserts that Hideo and Park disclose compounds which differ from the compounds claimed in the application in the position of the double bond in the side chain at position 17. The Examiner has asserted that the compounds claimed in the application are positional isomers of the prior art compounds in Hideo and Park. Because Hideo and Park teach the use of dammarane sapogenins or saponins as anticancer and antitumor agents, the Examiner contends on page 6, paragraph 2, that "even though by disclaiming certain compounds for anticipation, instant invention is considered obvious over the prior art, because instant invention is the positional isomer of the prior art." The Applicant respectfully submits that the compounds of the invention are not obvious in light of the prior art and requests withdrawal of the rejection of claims 1 to 26 in light of the following.

The Applicant has cancelled claims 4, 6, 11, 13, and 15 which are directed to the compounds PBM-110 and PAN-30. The Applicant has also amended claims 1, 14, and 16 to remove references to compounds PBM-110 and PAN-30. The remaining currently pending compound claims and claims directed to methods of cancer treatment using the compounds, that is claims 1 to 3, 5, 7, 8 to 10, 12, 14, and 16 to 26, are directed to the compounds PAM-120, PBM-100, and PAN-20.

The Applicant submits that <u>not all</u> of the compounds of the invention are positional isomers of the compounds disclosed in the cited prior art. It is submitted that the compound PBM-100 is not a positional isomer of dammara-20(22),24-diene-3β,12β-diol, disclosed in Hideo (compound hereafter referred to as "J1") because PBM-100 has additional hydroxyl groups at positions 6 and 24. PBM-100 is also not a positional isomer of dammara-20(22),24-diene-3β,6α,12β-triol, also disclosed in Hideo (compound hereafter referred to as "J2") because PBM-100 has an additional hydroxyl group at position 24. PBM-100 is not a positional isomer of any of the compounds disclosed in Park because PBM-100 has a hydroxyl group at position 3 and the compounds in Park have chains of glucosyl groups, or chains of acetylated glucosyl groups, at position 3.

The compound PAN-20 is not a positional isomer of either J1 or J2 because PAN-20 has a single glucosyl group attached at position 3 but J1 and J2 have a hydroxyl group at that

position. The compound PAN-20 is also not a positional isomer of the compounds 3β,12β-dihydroxy-damar-20(22),24-diene-3-O-β-D-6"-O-acetyl-glycopyranosyl-(1-2)-β-D-glucopyranoside (compound (II) on page 1 of Park, hereafter referred to as "P1") and Δ20(22)-ginsenoside Rg3 (compound (IV) on page 6 of Park, hereafter referred to as "P2") disclosed in Park because PAN-20 has only one glucosyl group attached at position 3, rather than a chain of glucosyl groups or acetylated glucosyl groups as found in P1 and P2.

Park additionally discloses the compounds ginsenoside Rg3 (compound (III) on page 5 of Park, hereafter referred to as "P3") and 3β,12β,20β-trihydroxy-damar-24-ene-3-O-β-D-6"-O-acetyl-glycopyranosyl-(1-2)-β-D-glucopyranoside (compound (I) on page 1 of Park, hereafter referred to as "P4"). The Applicant submits that compound P3 is not a positional isomer of any of the compounds in this application because, unlike the compounds of the invention, P3 has no double bonds at position 20 and there is a hydroxyl group attached to position 21. P4 is also not a positional isomer of any of the compounds in this application because it is similar in structure to compound P3 and also has an additional acetyl group attached to the chain of glucosyl groups at position 3.

Therefore, the Applicant respectfully submits that the compounds PBM-100 and PAN-20 of the invention are not positional isomers of any of the compounds disclosed in the cited prior art. On page 6 of the Office Action, under the heading "3. Ascertaining the differences between the prior art and the claims at issue", the Examiner contends that "Since instant is *the positional isomer of the prior art*, one having ordinary skilled in the art in search for additional dammarane sapogenins or saponins would be motivated to isolate or prepare such compounds and would expect anticancer activity." Because compounds PBM-100 and PAN-20 are not positional isomers of the compounds disclosed in the cited prior art, the Applicant submits that these compounds are not obvious in light of the cited prior art.

In addition, the Applicant submits that PBM-100 and PAN-20 are sufficiently different from the cited prior art compounds that a person of ordinary skill in the art would not be motivated to isolate or prepare such compounds having regard to the prior art. As discussed above, PBM-100 is different from the cited prior art compounds because it has additional hydroxyl groups. The Applicant submits that hydroxyl groups are known to be reactive groups. Therefore, a person skilled in the art would not expect a compound having additional hydroxyl groups to have the same or even similar activity as known compounds that do not have hydroxyl groups. As discussed above, PAN-20 differs from cited prior art compounds because it only has one glucosyl group at position 3. Because it only has one glucosyl group, PAN-20 is different in both size and shape from the cited prior art

compounds. The Applicant submits that it is know in the art that molecules of different size and shape react differently with other molecules. Therefore, a person skilled in the art would not expect a molecule with a different size and shape than a known molecule to have the same chemical activity as the known molecule. Therefore, it is submitted that PBM-100 and PAN-20 are not obvious in light of the prior art, and a person skilled in the art would not be motivated to isolate or prepared the compounds of the invention based on the compounds disclosed in the prior art. Therefore, the Applicant requests that the Examiner withdraw the rejection of the claims, particularly the rejection of claims 3, 5, 10, and 12 which are directed to compounds PBM-100 and PAN-20.

Furthermore, even if some of the compounds of the invention are positional isomers of the cited prior art compounds, the Applicant submits that the mere existence of positional isomers in the prior art cannot be relied upon as the basis of an obviousness rejection. As explained in the case of *Yamanouchi Pharmaceutical Co. v. Danbury Pharmacal*, 231 F. 3d 1339 at 1343 (Fed. Cir. 2000), citing *In re Dillon*, 919 F.2d 688 at 692 (Fed. Cir. 1990), "For a chemical compound, a prima facie case of obviousness requires 'structural similarity between claimed and prior art subject matter...*where the prior art gives reason or motivation to make the claimed compositions.*" The Applicant submits that the cited prior art does not give reason or motivation to make the compositions of the invention and therefore a *prima facie* case of obviousness cannot be established.

The Applicant submits that Park does not teach, suggest, motivate, or give reason for a person skilled in the art to make the compositions of the invention. Park discloses methods for creating acetylated ginseng compounds from non-acetylated ginseng compounds. However, none of the compositions of the invention contemplate acetylation. In addition, nowhere does Park teach or suggest alteration of the non-acetylated ginseng compounds into other non-acetylated ginseng compounds. Park arguably teaches away from the compounds of the invention because Park only teaches modification by acetylation (i.e. addition of reactive groups) and such modification would not create isomers of the compounds in this application. Park also does not teach a person skilled in the art to remove the chain of glucosyl groups from position 3, nor to shorten the chain of glucosyl groups at position 3. Again, Park arguably teaches away from the invention because Park discloses methods of adding reactive groups to position 3, whereas the compounds of the invention have reduced or removed the reactive groups from position 3. Park also does not teach a person skilled in the art to alter the position of the double bond at position 20. Therefore, a person skilled in the art would not be motivated by Park to create the compounds of the invention.

The Applicant submits that Hideo also does not teach, suggest, motivate, or give reason for a person skilled in the art to make the compositions of the invention. Hideo discloses compounds that have double bonds at position 20 which are different from the double bond position in the compounds in this application. Hideo does not teach the conversion of those compounds into the compounds of this application.

Morever, the Applicant submits that it is known in the art that the chemical activity of a ginseng compound cannot be reliably predicted based on the activity of an isomer of that compound. Therefore, a person skilled in the art would not be able to reliably predict that the compounds of the invention would have chemical activities similar to the activities of the compounds disclosed in Hideo.

In support of its submissions, the Applicant submits the article "Metabolism of 20(S)- and 20(R)-ginsenoside Rg3 by Human Intestinal Bacteria and Its Relation to *In Vitro* Biological Activities"(Bae et al., Biol. Pharm. Bull. 25(1)58-63 (2002)), attached hereto as Exhibit "B". This article discloses the results of experiments which compare the activity of the stereoisomers 20(S)-ginsenoside Rg3 and 20(R)-ginsenoside Rg3. The authors demonstrated that the compound 20(S)-ginsenoside Rg3 was metabolised by human intestinal microflora at a greater rate than the compound 20(R)-ginsenoside Rg3 was metabolised. The transformation rate for 20(S)-ginsenoside Rg3 was 0.57 ± 0.20 nmol/h/mg wet weight of feces, while the transformation rate for 20(R)-ginsenoside Rg3 was only 0.03 ± 0.002 nmol/h/mg wet weight of feces. The authors also demonstrated that bacteria isolated from human feces were capable of hydrolyzing 20(S)-ginsenoside Rg3. The compound 20(R)-ginsenoside Rg3 was either hydrolyzed at a slower rate than 20(S)-ginsenoside Rg3 was hydrolyzed, or it was not hydrolyzed at all by the same bacteria. Moreover, 20(S)-ginsenoside Rg3 was found to exhibit greater toxicity on tumor cell lines than 20(R)-ginsenoside Rg3 was. 20(R)-ginsenoside Rg3 only exhibited weak cytoxicity on tumor cell lines. The Applicant submits that these differences in biological activity between the stereoisomers of 20(S)-ginsenoside Rg3 and 20(R)-ginsenoside Rg3 indicate that biological activity may not be reliably predicted in a ginseng compound by analyzing the activity of an isomer of the ginseng compound. Therefore, the Applicant submits that it is known in the art that the chemical activity of compounds derived from ginseng, even stereoisomers, cannot necessarily be predicted based upon the activity of known compounds derived from ginseng.

In the recent case of *Ex parte Bonfils*, 64 USPQ 2d 1456 (27 August 2002), the Board of Patent Appeals and Interferences held that a *prima facie* case of obviousness under 35 USC

103 will not be established for a claimed compound if the Examiner only relies on the disclosure of the stereoisomer of the claimed compound as the basis of the rejection. The Examiner must explain why the differences would have been obvious, and the explanation must be supported by evidence on the record. The Board of Patent Appeals held that "where, as here, there is evidence of ***unpredictability*** and no evidence of common pharmaceutical or biological properties, the 'presumed' expectation of similar properties due to the similar structures is not well-founded" (emphasis added).

In the case of *In re O'Farrell*, 853 F.2d 894 at 903 (Fed. Cir. 1988), the court held that even if there is motivation in the prior art to try an experiment, if the prior art only makes the particular experiment or modification "***obvious to try***," this motivation will also not support a finding of obviousness. Furthermore, the prior art also needs to offer a "***reasonable expectation of success***" (*In re Longi*, 759 F.2d 887 at 896 (Fed. Cir. 1985).

The Applicant submits that the Examiner has only cited the disclosure of isomers of the compounds of the invention in the prior art, but the Examiner has not indicated how the cited prior art would motivate a person skilled in the art to try the compounds of the invention. The Applicant submits that, as evidenced by the article by Bae et al., it is known in the art that the activity of a ginseng compound may not be reliably predicted based on the activity of an isomer of the compound. Therefore, even if there is any motivation in the prior art to make and test the compounds of the invention, the Applicant submits that this motivation would merely be a motivation to try the compounds. Moreover, because the cited prior art does not teach, suggest, or motivate a person skilled in the art to even try the compounds of the invention, the cited prior art cannot offer a reasonable expectation of success. The Applicant submits that the cited prior art cannot support a finding of obviousness.

The Applicant submits that even if the cited prior art compounds may have chemical structures similar to the compounds of the invention, the differences between the compounds are significant and it would be difficult to predict the activity of one compound by examining the activity of its isomer. The Applicant submits that J1 and PAM-120 differ from one another in the position of the double bond at position 20. In J1, the bond is between positions 20 and 22. In PAM-120, the bond is between positions 20 and 21. A double bond is a planar bond and does not rotate. As a result, in J1, the side chain attached at position 22 does not rotate, but in PAM-120, the side chain at position 22 can rotate. This flexibility in the side chain may result in different physical and stereochemical interactions between PAM-120 and a target molecule as compared to J1 and a target

molecule. The Applicant submits that it is known in the art that differences in side chains can affect the activity of the molecule as a whole.

In summary, the Applicant submits that not all of the compounds of the invention are positional isomers of the cited prior art compounds and therefore, the claims directed to these compounds cannot be considered obvious in light of the cited prior art. Furthermore, the compounds are sufficiently different from the cited prior art compounds that a person skilled in the art would not be motivated to produce the compounds of the invention having regard to the cited prior art. Even if the compounds of the invention could be considered positional isomers of the cited prior art compounds, the Applicant submits that there is no motivation in the prior art to produce the compounds of the invention and therefore, the claims directed to the compounds of the invention are not obvious. Moreover, even if the prior art contained motivation to produce the compounds of the invention, the Applicant submits that it would merely be an "obvious to try" motivation to produce the compounds. The Applicant submits that it is known in the art that the activity of a ginseng compound may not be reliably predicted based on the activity of an isomer of the compound. Therefore, there is no "reasonable expectation of success" offered by the prior art to support a finding of obviousness. Lastly, the Applicant submits that even if the cited prior art compounds are positional isomers of the compounds of the invention, there are significant differences between the compounds such that the activity of one compound cannot be reliably predicted based on the activity of an isomer of that compound.

Therefore, the Applicant submits that a finding of obviousness is not supported by the cited prior art. The Applicant respectfully requests withdrawal of the rejection of claims 1 to 26 as amended.

35 USC § 103 Rejection of Process Claims 27 to 34

On page 5 of the Office Action, the Examiner states that "Claims 1-34 rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al. (Abstract of JP 08291194) and Park, Ki (WO97/31933)." However, at the bottom of page 5, the Examiner states "The process of making the compounds as presently claimed in claims 27-34 are taught by the prior art. See examples and claims in the WO reference." Therefore, it is unclear if the Examiner is citing both Hideo and Park against process claims 27 to 34, or only Park. Notwithstanding this uncertainty, the Applicant submits that process claims 27 to 34 are not obvious in light of either Hideo or Park.

A) Process of the Invention Is Not Obvious in Light of Hideo

The Applicant has obtained a computer translation of the full Hideo document published under Japanese Publication No. 08-291194 from the Japanese Patent Office ("Translated Hideo"). This translation is enclosed hereto as Exhibit "C" to this response.

On page 5, in paragraph 6(a) of Translated Hideo, it appears that the compounds disclosed in Hideo are prepared by macerating raw material ginseng in a lower alcohol, like methanol or ethanol to obtain an extract. A solvent is distilled from the extract, and the extract extractives are further extracted to obtain "ginsenoshido." In paragraph 6(b) of Translated Hideo, it appears that the extract can alternatively be contacted to a polystyrene adsorbent resin, and the resin is washed with water to elute "ginsenoshido."

On page 6, in paragraph 7(a) of Translated Hideo, further processing of the total "ginsenoshido" is described. The total "ginsenoshido" is incubated with hesperidinase or sucroclastic enzyme from human intestinal bacteria at 37°C for two days, which enzymatically hydrolyzes glucose from the 3rd and 20th positions of each ginsenoside. If the sugar is removed, a precipitate is generated. It then appears that acetic acid, concentrated hydrochloric acid, concentrated sulfuric acid, concentrated nitric acid, or trifluoroacetic acid is added, and the reaction is placed at room temperature or is heated.

Alternatively, on page 6, in paragraph 7(b) of Translated Hideo, it appears that total "ginsenoshido" can be dissolved in water, a lower alcohol, or water lower alcohol. It then appears that concentrated hydrochloric acid, concentrated sulfuric acid, concentrated nitric acid, or trifluoroacetic acid may be added to remove the sugar from position 20 of each "ginsenoshido" at room temperature or by heating. Hydroxyl groups appear to be removed by dehydration. It next appears that the reaction is extracted with ether, and then the extract is neutralized with sodium hydrogen carbonate.

The Applicant submits that the processes claimed in claims 27 to 34 are not obvious in light of the processes disclosed in Translated Hideo. The Applicant submits that the processes claimed in claims 27 to 34 do not disclose the use of enzymes or concentrated acids as disclosed in Translated Hideo. Claim 27, from which claims 28 to 32 depend, includes, in step (b)(ii) "placing the resultant mixture in a reaction tank so that the resultant mixture can undergo chemical reactions under required high temperature and high pressure" and in step (c)(iii) "placing the resultant mixture in a reaction tank so that the resultant mixture can undergo chemical reactions under required high temperature and high pressure." At page

14, paragraph 40, lines 22 to 23 of the Detailed Description, the Applicant discloses that "the mixture is thereafter put into a reaction tank to undergo chemical reactions under required high temperature and high pressure." At paragraph 40, lines 32 to 34, the Applicant discloses that the temperature and pressure in the reaction tank "can be between 150-300°C and the reaction pressure is between 2.5-8.4 MPa." Claims 33 and 34 also claim the step of "placing the resultant mixture in a reaction tank so that the resultant mixture can undergo chemical reactions under required high temperature and high pressure." Furthermore, Example 1 and Example 2 on pages 17 and 18 disclose processes which include temperatures of 240°C and 270°C and pressures of 3.5 and 4.5 MPa in the reaction tanks.

The Applicant submits that no where does Hideo teach the use of temperatures between 150-300°C and reaction pressures between 2.5-8.4 MPa to obtain the compounds disclosed in Hideo. Hideo arguably teaches away from the processes claimed in claims 27 to 34 because if the high temperatures and pressures claimed in claims 27 to 34 were used with the processes in Hideo, this would result in denaturation of the enzymes used to remove the sugars from positions 3 and 20 of the compounds disclosed in Hideo. Therefore, it would not be obvious to a person skilled in the art to have come easily and without inventive skill to the processes disclosed in claim 27 to 34 having regard to Hideo. The Applicant respectfully requests withdrawal of the citation of Hideo from claims 27 to 34.

B) Process of the Invention Is Not Obvious in Light of Park

Park discloses a process of preparing the claimed acetylated compounds P1 and P4 from extracts of plants of the Panax genus. According to Park, on page 4, the extracts can be prepared by heating roots or leaves of the plants, or water or lower alcohol extracts of the roots or leaves, for 0.5 to 20 hours at 110 to 180°C. The resulting processed ginseng is then extracted a number of times, and the resulting extractant is subjected to chromatography to obtain desired acetylated compounds P1 and P4. Park disloses at page 4, starting at line 33, that the heat treatment of the ginseng extract removes a sugar moiety attached to position 20 of panaxadiol saponins present in ginseng, and an acetyl group is introduced into the 6th position of the terminal glucose of the sugar moiety attached at position 3 to produce compound P1. Park discloses at page 5, starting at line 5, that compound P4 is produced by removing the OH group at postion 20 and hydrogen at position 22 through a dehydration reaction. On pages 5 and 6 of Park, it is disclosed that the compounds can alternatively be synthesized by acetylating known compound Rg3.

The Applicant submits that claims 27 to 34 are not obvious in light of Park. First, Park does not teach the use of high pressure to produce the compounds P1 and P4. In fact, Park does not disclose the use of any pressure at all. The Applicant submits that it is known in the art that different chemical reactions occur when heat is applied to compounds under normal atmospheric pressure than when heat is applied to the compounds above atmospheric pressure. For example, the Applicant submits that it is known in the art that different chemical reactions occur when a compound is heated to 110°C at atmospheric pressure (such as through the process of baking) than when a compound is heated to 110°C under pressure (such as through the process of autoclaving). Therefore, the Applicant submits that a person skilled in the art would expect to obtain different compounds from the process disclosed in Park than from the processes disclosed in claims 27 to 34.

Second, Park claims a temperature range which does not result in removal of glucosyl groups from position 3. Not only do the compounds obtained from the process in Park retain their glucosyl groups but the process disclosed in Park also results in the addition of acetyl groups to the glucosyl groups. The temperature and pressure ranges disclosed in claims 27 to 34 of this application result in the removal of glucosyl groups from position 3. For example, in Examples 1 and 2 on pages 17 and 18 of the Applicant's specification, processes for producing PAM-120, PBM-100, and PAN-20 are described. These processes, which include use of temperatures of 240°C and 270°C and pressures of 3.5 and 4.5 MPa, produce compounds which have no glucosyl groups (PAM-120 and PBM-100) or which only have one glucosyl group at position 3 (PAN-20).

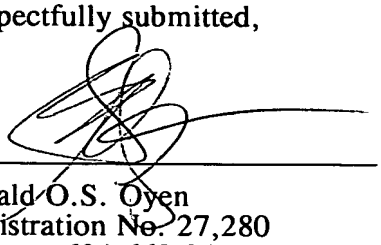
The Applicant submits that Park arguably teaches away from the processes claimed in claims 27 to 34 as the process in Park produces compounds which not only retain the glucosyl chain at position 3, but the process in Park adds an acetyl group to the glucosyl chain at position 3. The processes claimed in this application are used to remove glucosyl groups at position 3. It is submitted that it would not be obvious for a person skilled in the art seeking to remove glucosyl groups to adapt a process which adds to the glucosyl groups.

Therefore, the Applicant submits that claims 27 to 34 are not obvious in light of Park and respectfully requests withdrawal of the citation from the application.

The Applicant further submits that process claims 27 to 34 are not obvious in light of Hideo or Park and requests withdrawal of the citations from the application.

In light of the foregoing, the Applicant submits that this application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,

By: 

Gerald O.S. Goyen
Registration No. 27,280
tel: 604.669.3432 ext. 218
fax: 604.681.4081
e-mail: goyen@patentable.com

Vancouver, B.C.
CANADA